

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-15. (Cancelled)

16. (Cancelled).

17. (Cancelled).

18. (Currently Amended) Method ~~according to Claim 15~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein for raising the partial oxygen pressure of the air/fuel mixture fed to the first cylinders, the fuel quantity is reduced which is injected into the at least one second cylinder.

19. (Cancelled).

20. (Currently Amended) Method ~~according to Claim 17~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second,

wherein together with the reduction of the fuel quantity injected into the at least one second cylinder, the fuel quantity is raised which is injected into the first cylinders.

21. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein for lowering the partial oxygen pressure of the air/fuel mixture ~~carbureted fuel~~ fed to the first cylinders, the fuel quantity is increased which is injected into the at least one second cylinder.

22. (Currently Amended) Previously Presented) Method according to Claim 17 21, wherein for lowering the partial oxygen pressure of the air/fuel mixture carbureted fuel fed to the first cylinders, the fuel quantity is increased which is injected into the at least one second cylinder wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second.

23. (Previously Presented) Method according to Claim 21, wherein together with the increasing of the fuel amount injected into the at least one second cylinder, the start of the injection of the fuel amount into the at least one second cylinder is shifted to late.

24. (Previously Presented) Method according to Claim 22, wherein together with the increasing of the fuel amount injected into the at least one second cylinder, the start of the injection of the fuel amount into the at least one second cylinder is shifted to late.

25. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein during acceleration operations of the internal-combustion engine, the fuel amount injected into the at least one second cylinder is one of reduced and switched off completely.

26. (Currently Amended) Method according to claim 17 25, ~~wherein during acceleration operations of the internal combustion engine, the fuel amount injected into the at least one second cylinder is one of reduced and switched off completely~~ wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second.

27. (Previously Presented) Method according to Claim 18, wherein during acceleration operations of the internal-combustion engine, the fuel amount injected into the at least one second cylinder is one of reduced and switched off completely.

28. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein the fuel injection of the at least one second cylinder is switched off in the idling operation of the internal-combustion engine.

29. (Currently Amended) Method according to Claim 17 28, ~~wherein the fuel injection of the at least one second cylinder is switched off in the idling operation of the internal-combustion engine~~ wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second.

30. (Previously Presented) Method according to Claim 18, wherein the fuel injection of the at least one second cylinder is switched off in the idling operation of the internal-combustion engine.

31. (Previously Presented) Method according to Claim 25, wherein the fuel injection of the at least one second cylinder is switched off in the idling operation of the internal-combustion engine.

32. (Cancelled).

33. (Previously Presented) Method according to claim 18, wherein controlling of the partial oxygen pressure of the carbureted gas fed to the first

cylinders takes place as a function of at least one of the following values in the characteristic diagram of the internal-combustion engine operation:

- (i) cylinder pressure,
- (ii) concentration of exhaust gas constituents, particularly NO<sub>x</sub>, HC, CO,
- (iii) exhaust gas temperature,
- (iv) engine torque,
- (v) fuel usage,
- (vi) supercharging pressure, and
- (vii) rotational engine speed.

34. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein the injection of the fuel takes place by means of a common rail injection system which has a common preliminary storage device for storing



highly pressurized fuel and fuel injectors connected with the common preliminary storage device by way of injection lines, for injecting fuel into the cylinders of the internal-combustion engine and a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling of the injection of the fuel quantity fed to the at least one second cylinder being carried out by the control unit independently of the injection of the fuel quantity fed to the first cylinders.

35. (Currently Amended) Method according to Claim 17 34, ~~wherein the injection of the fuel takes place by means of a common rail injection system which has a common preliminary storage device for storing highly pressurized fuel and fuel injectors connected with the common preliminary storage device by way of injection lines, for injecting fuel into the cylinders of the internal-combustion engine and a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling of the injection of the fuel quantity fed to the at least one second cylinder being carried out by the control unit independently of the injection of the fuel quantity fed to the first cylinders~~ wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second.

36. (Previously Presented) Method according to Claim 18, wherein the injection of the fuel takes place by means of a common rail injection system

which has a common preliminary storage device for storing highly pressurized fuel and fuel injectors connected with the common preliminary storage device by way of injection lines, for injecting fuel into the cylinders of the internal-combustion engine and a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling of the injection of the fuel quantity fed to the at least one second cylinder being carried out by the control unit independently of the injection of the fuel quantity fed to the first cylinders.

37. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein the injection of the fuel takes place by means of a common rail injection system which, for each fuel injector, has an individual storage device for storing pressurized fuel, the individual storage device being connected by way of a distributor line with a common supply line, and has a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling

of the injection of the fuel quantity fed to the at least one second cylinder by the control unit taking place independently of the injection of the fuel quantity fed to the first cylinders.

38. (Currently Amended) Method according to Claim 17 37, ~~wherein the injection of the fuel takes place by means of a common rail injection system which, for each fuel injector, has an individual storage device for storing pressurized fuel, the individual storage device being connected by way of a distributor line with a common supply line, and has a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling of the injection of the fuel quantity fed to the at least one second cylinder by the control unit taking place independently of the injection of the fuel quantity fed to the first cylinders~~ wherein said controlling of the injected fuel quantity includes independently adjusting at least one of the injection start and the injection duration of the fuel injection for the first cylinders and for the at least one second.

39. (Previously Presented) Method according to Claim 18, wherein the injection of the fuel takes place by means of a common rail injection system which, for each fuel injector, has an individual storage device for storing pressurized fuel, the individual storage device being connected by way of a distributor line with a common supply line, and has a control unit for controlling the fuel quantity fed to the cylinders for the injection, the controlling of the

injection of the fuel quantity fed to the at least one second cylinder by the control unit taking place independently of the injection of the fuel quantity fed to the first cylinders.

40. (Currently Amended) Method ~~according to Claim 16~~ of operating an internal-combustion engine which has a plurality of first cylinders and at least one second cylinder, the at least one second cylinder serving as an input cylinder, in that a portion of the exhaust gas from the at least one second cylinder is fed by way of an exhaust gas recirculating system to an intake air to produce an air/fuel mixture for the first cylinders, said engine also having an injection system for injecting fuel into the first cylinders and into the at least one second cylinder,

said method comprising controlling of the injected fuel quantity of the at least one second cylinder independently of the controlling of the injected fuel quantity of the first cylinders,

wherein the engine has one second cylinder.

41. (Previously Presented) Method according to claim 40, wherein the engine has five first cylinders.

42. (Cancelled).

43. (Currently Amended) Internal-combustion engine ~~according to Claim 42~~ which has a plurality of first cylinders and at least one second cylinder, which

at least one second cylinder is used as an input cylinder in that a portion of the exhaust gas therefrom is fed to the an intake air to produce an air/fuel mixture for the first cylinders by way of an exhaust gas recirculating system,

wherein an injection system is provided for injecting fuel into the first cylinders and into the at least one second cylinder, the injection system permitting a mutually independent controlling of the injected fuel quantity of the first cylinders and of the at least one second cylinder,

wherein the injection system of the internal-combustion engine is constructed as a common rail injection system, which as a common preliminary storage device for storing highly pressurized fuel, and fuel injectors connected by way of injection lines with the common preliminary storage device for injecting the fuel into the cylinders of the internal-combustion engine, as well as a control unit for controlling the injection of the fuel quantity fed to the cylinders, the control unit being constructed for controlling the injection of the fuel quantity fed to the at least one second cylinder independently of the injection of the fuel quantity fed to the first cylinders.

44. (Currently Amended) Internal-combustion engine ~~according to Claim 42~~ which has a plurality of first cylinders and at least one second cylinder, which at least one second cylinder is used as an input cylinder in that a portion of the exhaust gas therefrom is fed to the an intake air to produce an air/fuel mixture for the first cylinders by way of an exhaust gas recirculating system,

wherein an injection system is provided for injecting fuel into the first cylinders and into the at least one second cylinder, the injection system permitting a mutually independent controlling of the injected fuel quantity of the first cylinders and of the at least one second cylinder,

wherein the injection system comprises fuel injectors, individual storage devices for storing highly pressurized fuel, distributor lines and a common supply line and a control unit,

wherein an individual storage device is assigned to each fuel injector, the individual storage device being connected by way of a respective distributor line with the common supply line, and

wherein the control unit is constructed such that a controlling of the injection of the fuel quantity fed to the at least one second cylinder takes place independently of the injection of the fuel quantity fed to the first cylinders.

45. (Cancelled).

46. (Previously presented) Internal-combustion engine according to Claim 43, wherein for controlling the injection of the fuel quantity injected into the at least one second cylinder and the injection of the fuel quantity injected into the first cylinders, at least one sensor is provided which, for feeding their output signals are coupled with the control unit, said at least one sensor including at least one of:

- (i) a pressure sensor in the cylinder,
- (ii) a gas concentration sensor for exhaust gas constituents,
- (iii) a temperature sensor in the exhaust gas pipe train,
- (iv) a torque sensor,
- (v) a fuel flow rate sensor,
- (vi) a pressure sensor for the supercharging pressure, and
- (vii) a rotational speed sensor on the crankshaft.

47. (Previously presented) Internal-combustion engine according to Claim 44, wherein for controlling the injection of the fuel quantity injected into the at least one second cylinder and the injection of the fuel quantity injected into the first cylinders, at least one sensor is provided which, for feeding their output signals are coupled with the control unit, said at least one sensor including at least one of:

- (i) a pressure sensor in the cylinder,
- (ii) a gas concentration sensor for exhaust gas constituents,
- (iii) a temperature sensor in the exhaust gas pipe train,
- (iv) a torque sensor,
- (v) a fuel flow rate sensor,
- (vi) a pressure sensor for the supercharging pressure, and
- (vii) a rotational speed sensor on the crankshaft.

48. (Cancelled)

49. (Cancelled)